

REMARKS

Claims 1, 7, 9, 10, 12–14, and 16–34 are pending in this application. Claims 1, 7, 9, 10, 12–14, and 16–21 have been amended. Claims 22–34 are new. Claims 2–6, 8, 11, and 15 are cancelled. The filing fee has been paid based on the previous total number of claims, i.e., twenty-one (21). The current total number of claims is twenty-six (26). The Commission is hereby authorized to charge the fee of \$250.00 for the five (5) extra claims to Deposit Account No. 02-2955 in the name of Boehringer Ingelheim Corporation.

The Disposition of Claims in the Office Action Summary incorrectly states that claims 8–21 are withdrawn from consideration. This Application was not subject to a restriction requirement. The Applicant respectfully submits that the actual disposition of claims is as stated hereinabove.

Applicant claims under 35 U.S.C. 119(a) for foreign priority based on German Patent Application 102 44 795. A copy of the priority document with a certified seal was filed on June 3, 2004. Upon review of the image file wrapper through private PAIR, it is apparent that the certified seal was removed by USPTO personnel in order to scan the document. The Applicant declares "on the record" that the German reference submitted is actually a certified copy and the requirements of 35 U.S.C. 119(b) have been satisfied.

The Examiner objects to the drawings because the drawings allegedly do not show a nozzle configured as an aperture plate. The Applicant respectfully directs

the Examiner to Fig. 4 and page 18. Fig. 4 shows a schematic representation of a nozzle 10 comprising an aperture plate 28. Thus, the drawings show an aperture plate as claimed. Therefore, the Applicant respectfully submits that corrected drawing sheets are not required in reply to the pending Office Action.

The Examiner objects to the Abstract because the Abstract is more than one paragraph and longer than 150 words. In light of the foregoing amendment of the Abstract, the Applicant respectfully submits that the objection to the Abstract is moot and should be withdrawn.

The Examiner objects to claim 8-21 under 37 CFR 1.75(c) as being in improper form. In light of the foregoing amendment of the Abstract, the Applicant respectfully submits that the objection to claim 8-21 is moot and should be withdrawn.

Claims 1-7 stand rejected under 35 U.S.C. 102(b) as being anticipated by US6089228 to Smith. The Applicant respectfully disagrees with the Examiner and submits that the claims of the present application are not anticipated by Smith. In particular, the Applicant submits that the Venturi-like nozzle of Smith does not anticipate the Laval nozzle of the present invention.

As acknowledged by the Examiner, Smith describes a Venturi-like nozzle, which operates according to the Bernoulli principle. As stated at column 14, lines 39-48, of Smith,

The annular plenum 52, in turn, is connected to a pair of gas conduits 54 [that] direct converging gas streams into the flow path defined by

lumen 46 of the feed tube 40. The angle at which the gas conduits 54 are oriented is chosen to provide a proper balance between the magnitude of the flow velocity induced in the powder stream drawn through lumen 46 and the magnitude of the shear forces [that] break up agglomerates in the powder as they pass from the outlet end 18 into an expansion section.

As acknowledged in Smith, powder de-agglomeration in a Venturi nozzle takes place solely due to strong shearing forces between the powder particles and the gas. The shearing forces are the only de-agglomeration force because a gas in the narrowest region of a Venturi nozzle flows at a speed equaling at most the speed of sound, but not super-sonic speed.

Unlike Smith, claims 1, 7, 9, 10, 12–14, 16–21 of the present application recite a Laval nozzle. Unlike the Venturi nozzle of Smith, the Laval nozzle as presently recited in 1, 7, 9, 10, 12–14, 16–21 does not have gas conduits to draw a powder through a lumen. Instead, claims 1, 7, 9, 10, 12–14, 16–21 recite a pressure medium system (3), which directs a pressure medium (8) (e.g., pressurized air) through a chamber or similar device for provisioning (6) a powder formulation (7). Moreover, as stated in the present application, in a Laval nozzle, gas is accelerated by the length-width geometry of the nozzle in such a manner that the gas achieves super-sonic speed (see pg. 8 of the present application). Thus, powder de-agglomeration does not occur solely due to sheer forces, but also due to "Mach shock."

In light of the foregoing, the Applicant respectfully requests that the §102(b) rejection of claims 1–7 be reconsidered and withdrawn.

The Examiner states that Smith discloses a nozzle comprising an aperture plate. The Examiner makes reference to the figures of Smith, and the Applicant understands that the Examiner is asserting that an aperture plate is shown at A₃ in Fig. 4A of Smith. The Applicant disagrees with the Examiner, and respectfully submits that Smith does not describe or even suggest an aperture plate as presently claimed.

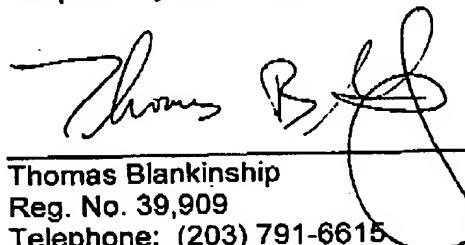
In relevant part, independent claim 22 recites a nozzle comprising an aperture plate through which an aerosol flows, which aerosol comprises powder particles in dispersed form within a gaseous pressure medium (8).

Smith, unlike the present invention, as clearly shown in the figures thereof, does not comprise a nozzle comprising an aperture plate through which an aerosol flows. Referring to column 14, lines 31–33 and 59–64, the area A₃ is a region of the expansion section 58 that is adjacent to throat 18 of the feed tube lumen 46. The horizontal line indicated as reference numeral 60 is not a structural feature, but rather a contour line demarking a non-expanding "mixing volume." In other words, the area A₃ is simply a region of an open conduit. Moreover, in so far as the gaseous pressure medium of Smith is introduced through gas conduits 54, it is impossible for an aerosol (i.e., powder particles in dispersed form within a gaseous pressure medium) to flow through the area indicated as A₃ in Fig. 4A of Smith. Again, as stated in Smith, the area A₃ is part of the expansion section 58 dedicated to the mixing volume 60. The Applicant submits that the mixing volume is the area of the expansion section wherein powder particles become dispersed in a gas, and wherefrom the aerosol flows. In other words, the aerosol *per se* does not flow

through the mixing volume, it is created in the mixing volume, and then flows through the remaining length of the expansion section.

The Applicant respectfully requests favorable consideration and that the claims of the present application be passed to allowance.

Respectfully submitted,

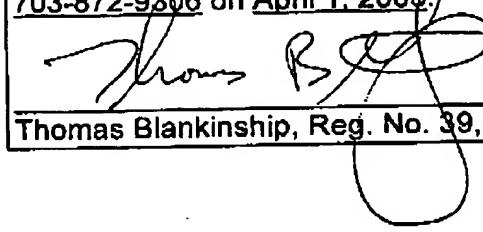


Date: April 1, 2005

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I hereby certify that this correspondence is being facsimile transmitted to the U.S.P.T.O. at 703-872-9306 on April 1, 2005.



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